

Concluded
removing heat from said translating die via a plurality of heat sink pathways.

R E M A R K S

Attorney for Applicants wishes to thank Examiner Juliana K. Kang for allowing the subject matter of claims 2, 4 through 22, 31, and 32.

Reconsideration of the above-identified patent application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1 and 27 have been amended. Claims 2, 23 through 26, and 28 have been canceled. Claims 1, 3 through 22, 27, and 29 through 32 remain in the application.

In accordance with the present invention, there is provided a single package for coupling a multiple channel fiber optic cable to a multiple channel Vertical Cavity Surface Emitting Laser (VCSEL) transmitter and for coupling a second multiple channel fiber optic cable to a multiple

channel Perpendicularly Aligned Integrated Die (PAID) receiver. The active surface of both the receiving and transmitting (optoelectronic) dies are oriented perpendicular to the plane of the laminate package. The package can be soldered directly to an end user (host) card and have its cable plugged directly through the tailstock. In other words, the cable can exit from the card in a direction parallel to the plane of the card.

The package article comprises a laminate table or board upon which amplifier dies are supported. The laminate carries an overmold frame that optionally houses a Faraday barrier shield for RF isolation purposes. The overmold frame supports an optical subassembly, which accepts an optical connector that is attached to an end of the parallel fiber optic cable. A retainer substantially encloses an optical coupler. Attached to the optical coupler is one of a plurality of heat sink carriers, which in turn supports an optoelectronic die. *One function of the heat sink carrier is to remove heat from the optoelectronic die. The heat drawn into the heat sink carrier may be dissipated into the nearby air. Optionally, the heat may pass through a heat-conducting adhesive compound*

to a heat sink package cover where it is then dissipated to the air. The adhesive and cover act as a second heat-dissipating pathway (our emphasis).

Claim 1 has been amended to incorporate the allowable subject matter of now canceled claim 2.

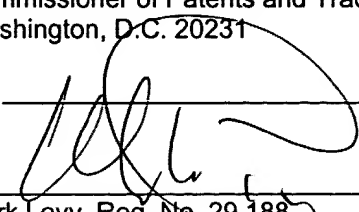
Claim 27 has been amended to incorporate the subject matter of now canceled claim 28, with the addition of removing heat from the translating die through multiple pathways, which is not taught in MAEHARA et al.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

In view of the foregoing amendments and remarks, Applicants respectfully request that claims 1, 3 through 22, 27, and 29 through 32 be allowed and the application be passed to issue.

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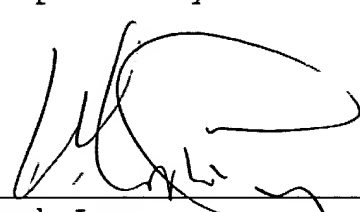
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1 and 27 have been amended as indicated.

1. (Twice Amended) A package article for removably accepting a fiber optic cable, said package article being adaptable for operatively connecting to a host card, comprising:

a laminate for supporting optoelectronic components;

an amplifier die operatively connected to and supported by said laminate for amplifying electrical signals;

a flexible circuit electrically connected to and supported by said laminate for receiving said amplified electrical signals from said amplifier die; [and]

an optoelectronic die electrically connected to said flexible circuit for receiving said amplified electrical signals generated by said amplifier die and for generating optical signals responsive thereto[.] and

a heat sink carrier operatively connected to said flexible circuit, and attached to said optoelectronic die for removing heat therefrom.

27. (Twice Amended) A method for coupling at least one fiber optic cable to at least one translating die, comprising:

applying an electrical signal from an amplifier die to a flexible circuit disposed on a laminate to which a host card can be electrically connected;

converting said electrical signal to an optical signal; [and]

applying said optical signal to an optical coupler for transmitting said optical signal to an optical

connector attached to said at least one fiber optic
cable[.]; and

removing heat from said translating die via a
plurality of heat sink pathways.